

115-5-28/44

Microcalorimeters for Measuring Superhigh Frequency Power in 3-centimeter
Range

ments and to decrease the errors, as well as to apply the
isothermic microcalorimeters for other frequency ranges.
A.I. Samoylovich is referred to as having creatively part-
icipated in work on the subject instruments.
The article contains 2 drawings.

AVAILABLE: Library of Congress

Card 3/3

PRONENKO, V.I.

9(6)

PHASE I BOOK EXPLOITATION SOV/1369

Burdun, Grigoriy Dmitriyevich, Rafkat Amirkhanov 'ch Valitov,
Lev Nikolayevich Bryanskiy, Vitaliy Dmitriyevich Kukush, and
Vitaliy Ivanovich Pronenko

Radioizmereniya na millimetrovykh volnakh (Measurement of Milli-
meter Radio Waves) Izd-vo Kharkovskogo univ-ta, 1958. 121 p.
5,000 copies printed.

Ed. (Title page): Burdun, G.D., Professor; Ed. (Inside book):
M.I. Prokopenko,; Tech. Ed.: Ya.T. Chernyshenko.

PURPOSE: The book is intended as a textbook for engineering students
taking a course in superhigh-frequency radio measurements. It
may also be used by scientists and engineers working in the field
of radio measurement and dealing with superhigh frequencies.

COVERAGE: The author discusses basic problems of radio measurement
in the millimeter band. He describes the methods and instruments
used in measuring wavelength, frequency, power, attenuation,

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Measurement of Millimeter Radio Waves

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impedance, voltage standing-wave ratio, dielectric constant, and magnetic permeability. Signal generators and spectrum analyzers are not discussed. The book is the first attempt to systematize the material on measurement in the millimeter band. No personalities are mentioned. There are 56 references, of which 22 are Soviet (including 3 translations), 28 English, 4 French, 1 German, and 1 Czech.

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5. Pondermotive instruments for measuring dielectrics

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4-16-59

Card 5/5

AUTHORS: Pronenko, V.I., Belikov, Ye.N. SOV-115-58-4-35/45

TITLE: A Broad-Band Automatic Super-High Frequency Amplitude Stabilizer (Shirokopolosnyy avtomaticheskii stabilizator svch moshchnosti)

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 4, pp 81-84 (USSR)

ABSTRACT: Variations of a functional scheme for stabilizing the super-high frequency amplitude level are described. With this scheme existing generators may be used for various types of fine measurement. Details of an actual stabilizing system and equipment are given. Here a broad-band detector section is used for the measuring element, a battery with voltage divider for the reference voltage data-unit, a photo-compensator for the dc amplifier and an electro-mechanical attenuator for the executive mechanism. The detector sections operate in the bands 2.6-3.2 cm and 3.2-3.6 cm as amplitude indicators and have a transfer constant which varies with the frequency approximately from 10-13 db. Details of the individual

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SOV-115-52-4-35/45

A Broad-Band Automatic Super-High Frequency Amplitude Stabilizer

units and the functioning of the stabilizer are given. The stabilizer operates at amplitude levels of 10-100 mwt with a stabilization accuracy of ± 0.5 db. The stabilization factor is roughly 140. There are 2 diagrams, 1 graph, 1 photo and 1 American reference.

1. Frequency stabilizers--Design

Card 2/2

82825

S/115/60/000/007/009/011
B019/B058

9,3260

AUTHORS: Pronenko, V. I., Bryanskiy, L. N.

TITLE: An Instrument for Measuring the Standing Wave Ratio of a Generator²¹

PERIODICAL: Izmeritel'naya tekhnika, 1960, No. 7, pp. 48 - 49

TEXT: When measuring the standing wave ratio of a generator, a method is used in most cases, in which the amplitudes of the standing waves are altered through a change of the phase relations between the basic and the harmonic waves, by changing the length of a wave guide, at one end of which the measuring instrument is attached and the second end of which is short-circuited. For the improvement and acceleration of the measuring process, it is necessary to change the electric length of the wave-guide circuit in the zone probe - generator, simultaneously maintaining the length of the zone probe - short circuit. These requirements can be met by using a phase shifter in the probe head or a phase shifter with a special mismatching section. The great demands made on this phase shifter are pointed out, and a simpler method is proposed

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An Instrument for Measuring the Standing
Wave Ratio of a Generator

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B019/B058

next, in which a movable, contactless piston, short-circuiting the wave guide, is used. In its axis of symmetry, this piston has an opening, the diameter of which lies below the critical one. A piece of coaxial cable, one end of which is connected with the coupling loop and the other one with a broad-band detector chamber, is pushed through this opening. This arrangement is shown in Fig. 1. The measurement of the standing wave ratio is then discussed in detail and the advantages of the instrument are mentioned. The error is very small and the instrument can be used for the tuning of generators. There are 1 figure, 1 table, and 2 Soviet references.



Card 2/2

31840
S/194/61/000/010/065/082
D271/D301

26.2190
AUTHOR:

Pronenko, V.I.

TITLE:

Analysis of errors of a fluid flow microcalorimeter

PERIODICAL:

Referativnyy zhurnal. Avtomatika i radioelektronika,
no. 10, 1961, 21, abstract 10 1144 (Tr. In-tov Kom-
ta standartov, mer i izmerit. priborov pri Sov. Min.
SSSR, 1960, no. 48, 24-41)

TEXT:

The measurement errors of a fluid flow microcalori-
meter are theoretically and experimentally studied; such microcalori-
meters are used for measuring small microwave powers. The follow-
ing partial errors of the microcalorimeter are considered: Error
due to the instability of ambient temperature, error due to the
lack of constancy in the fluid rate of flow, errors of the tempera-
ture drop indicator, error of the meter of the substituted power,
errors due to the difference in thermal losses in microcalorimeter
housing of the measured and substituted power, errors due to losses

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D271/D301

Analysis of errors...

in the input waveguide, and errors due to microwave power reflection at the input of the microcalorimeter. Recommendations on how to reduce errors are given on the basis of results obtained. In order to reduce errors due to the instability of temperature it is necessary to shorten the measuring period by decreasing thermal capacity of the housing, thermocouple mounting, etc; it is necessary to increase the flow of the liquid, to increase thermal capacity of the microcalorimeter and improve its thermal insulation, and to reduce the volume of liquid in the housing. In a model of a microcalorimeter built in accordance with the above recommendations, the indicated error does not exceed 10-20 mW when temperature changes at a constant rate of 1°C per 3 min. In order to reduce errors due to the lack of constancy in the fluid rate of flow it is necessary to stabilize pressure drops, to reduce the hydraulic resistance of the housing and to adjust the microcalorimeter for minimum error by means of adjustable hydraulic resistance. The reduction of errors due to the lack of equivalence of thermal losses is obtained by reducing thermal losses, by equalizing thermal losses and by finding

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Analysis of errors...

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systematic errors through an investigation of temperature distribution in the housing. Recommendations are given regarding practical construction of individual parts of the microcalorimeter. An experimental determination of the mean-square error of a series of five measurements at power levels of 1.7-70 mW has shown that the disagreement with the analytical results is no more than 0.4%. 2 references. [Abstracter's note: Complete translation]

Card 3/3

PRONENKO, V.I.; SKUDNYY, B.N.

Specification of the characteristics of the MZ-1 (IM-6) transistor low-power meter. Izv. tekhn. no.3:51-52 Mr '65. (MIRA 18:5)

L 9453-66 EWT(d)/EWT(1)/EEC(k)-2/EWA(h)

ACC NR: AP5025586

SOURCE CODE: UR/0115/65/000/009/0044/0047

AUTHOR: Pronenko, V. I.

ORG: none

TITLE: Wide-band calorimetric shf power meter

SOURCE: Izmeritel'naya tekhnika, no. 9, 1965, 44-47

TOPIC TAGS: power meter, calorimeter, microwave power²⁵, shf

ABSTRACT: The M2-1 power meter is designed on the principle of a calorimetric fluid-flow meter. The shf power is measured by comparing the thermal power, obtained when the measured power is dissipated, with known values of direct and low-frequency currents (calibrated power). The power dissipated in the meter heats the fluid, which is usually induced by a differential indicator type block. The heating of the fluid is proportional to the dissipated power, and direct reading, after calibration, is possible. The M2-1 meter is capable of measurements in the following ranges: 3, 7.5, 15, 30, 75, 150, and 300 mv. The operating frequency range of 1000-16,700 Mc is divided into six subranges: 1) 1000-3000 Mc, with a 75-ohm and 16 x 4.6-mm-diameter coaxial input; 2) 1000-3000 Mc, with a 50-ohm and 16 x 6.95-mm-diameter coaxial input; 3) 3000-5800 Mc, with a 50-ohm and 10 x 4.34-mm-diameter coaxial input; 4) 5550 to 8340 Mc, with a 15 x 23-mm waveguide input; 5) 8340-12,000 Mc, with a 10 x 23-mm

Card 1/2

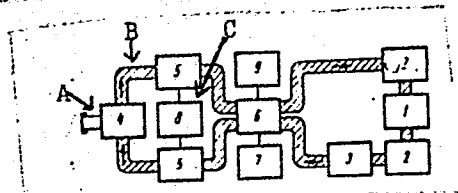
UDC: 681.2:621.317.38.029.6

L 9453-66

ACC NR: AP5025586

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Fig. 1. M2-1 shf power meter



A - Shf transmission line; B - hydraulic coupling; C - electrical connections;
1 - pump; 2 - air dampers; 3 - thermal damper; 4 - calorimetric head; 5 - heaters;
6 - thermopile; 7 - photocompensation amplifier; 8 - calibration current source;
9 - compensating voltage source.

waveguide input; and 6) 11,500—16,700 Mc, with a 8 x 17-mm waveguide input. A block diagram is shown in the figure. Orig. art. has: 3 figures. [JR]

SUB CODE: 1409/ SUBM DATE: none/ ORIG REF: 003/ ATD PRESS: 4154

Card 2/2

PRONENKO, V.I.

Wide-range calorimetric superhigh-frequency power meter. Izv. tekhn.
no.9:44-47 S '65. (MIRA 18:10)

L 19676-65 FRT(d)/FRT(1)/EEC(k)-2/EEC-l/ENA(h) Po-l/Pq-l/Pg-l/Peb/Pk-l/Pl-l
SSD/AFWL

ACCESSION NR: AP4049082

S/0115/64/000/009/0043/0045

AUTHOR: Pronenko, V. I.; Frumkin, V. D.

TITLE: Checking power meters 25

SOURCE: Izmeritel'naya tekhnika, no. 9, 1964, 43-45

TOPIC TAGS: power meter, power measurement, SHF power measurement gm

ABSTRACT: An outfit for checking SHF-power meters is described; it consists
(see Enclosure 1) of signal generator 1, directional coupler 2, fixed attenuator 3,
directional coupler 4, waveguide 5, and wavemeter 7.

Card 1/32

L 19676-65

ACCESSION NR: AP4049082

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errors involved are presented. The principal purpose of the power calibrator is an overall check of low-power meters; however, the calibrator can also be used for checking (with an error of ± 0.25 db) the measuring

ASSOCIATION: none

SUBMITTED: 00

SUB CODE: EC

NO REF SOV: 000

ENCL: 01

OTHER: 000

Card 2/3

FRONENKO, V.I.; FRUMKIN, V.D.

Unity and precision of power measurements at high and superhigh frequencies. Izv. vuzov, no. 4:51-52 Ap '64. (MIRA 17:7)

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(Teachers, Training of) (Technical education)

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arkhitekt

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MAKLETSOVA, N., dotsent, nauchnyy rukovoditel'; TRAKHTENBERG, N.,
dotsent, nauchnyy rukovoditel'.

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SO - SIRA SI, 90-53, 15 December 1953

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Trudy Inst.geog. no.65:86-101 '55. (MIRA 8:11)
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(Caspian Sea region--Physical geography)

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(Caspian Sea region--Geology, Structural)

PRONICHEVA, M.V.

Data on the recent tectonics of the Volga-Ural interfluve and its importance for petroleum prospecting. Trudy VNIGNI no.30:274-292 '61.

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ZHERNAKOV, P.I.; AVVAKUMOV, V.A.; PRONICHEVA, M.V.

Practice in using materials of aerophotography for the study
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region. Trudy VNIIGNI no.34:132-135 '61. (MIRA 15:7)
(Aktyubinsk Province—Geology, Structural)
(Aeronautics in geology)

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SOKOLIN, Kh.G.; TSIBIZOV, G.G.

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(Astrakhan Province--Prospecting)
(Kalmyk A.S.S.R.--Prospecting)

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and recent tectonics. Geol. nafti i gaza 7 no.5:53-54 My '63.
(MIRA 16:6)

(Geology, Structural)
(Geomorphology)

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Using aerial methods and geomorphological investigations in the study of the tectonic structure of the western Mugodzhar Hills region in connection with its oil and gas potential. Neftgaz. geol. i geofiz. no.7:26-31 '64. (MIRA 17:8)

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(MIRA 18:8)

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Surgical treatment of traumatic subcutaneous ruptures of the popliteal
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(RICKETS) (CALCIUM METABOLISM DISORDERS)

(PHOSPHORUS METABOLISM DISORDERS)

(ACID-BASE EQUILIBRIUM)

(ALKALINE PHOSPHATASE) (AMINO ACIDS)

(PHOSPHORUS) (BLOOD CHEMICAL ANALYSIS)

(URINE)

MILLEROWA, Danuta; PRONICKA, Ewa

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in infants. Pediat. pol. 39 no.1:25-31 Ja'64

1. Z I Kliniki Pediatrycznej PAM w Szczecinie; Kierownik: prof.
dr. med. J.Starkiewiczowa.

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PROKOPENKO, F.F., gvardii polkovnik; PRONICHKIN, P.P., podpolkovnik

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Prokopenko, P.P. Pronichkin. Vest. Vozd. Fl. 40 no.12:79-81
D '57. (MIRA 14:12)

(Helicopters--Piloting)
(Tiniakov, G.A.)

PRONIEWICZ, Zbigniew, mgr.

Employees' vacation in the Soviet Union and in the countries
of People's Democracies. Praca zabezp spol 3 no.12:33-35 '61.

DANYSZ, A.; PRONIEWSKI, H.; WISNIEWSKI, K.; ZACZEK, T.; POLOCKI, B.

Reactivity to vegetative drugs in the acute radiation sickness.
Sborn. ved. prac. lek. fak. Karlov. Univ. (Hrad. Kral.) 6 no. 1: 11-18
'63.

1. Department of Pharmacology, Medical Academy Bialystok,
Poland; head of Department: doc. A. Danysz, M.D.

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MALOFIEJEV, Michal; PRONIEWSKI, Henryk

Physiological variability of the P wave in esophageal electrocardiographic leads in dogs. Acta physiol pol 12 no.3:451-454 '61.

1. Z Pracowni Elektrokardiograficznej Wojewodzkiego Szpitala im.
J. Sniadeckiego Kierownik: doc. dr W. Zankiewicz z Zakladu Farmakologii
A.M. w Bialymstoku Kierownik: dr A. Danysz.
(ELECTROCARDIOGRAPHY)

DANISZ, Andrzej; PRONIEWSKI, H.

Radioprotective properties of dianabol. Pol. tyg. lek. 17 no.13:
489-490 26 Mr '62.

1. Z Zakladu Farmakologii AM w Bialymstoku; kierownik: doc. dr med.
A. Danysz.

(STEROIDS ther) (RADIATION PROTECTION)

PRONIEWSKI, Jęzry; LAMBERS, Krystyna

Studies on the effect of pal... on the course of ...
Pol. 35 no.6:357-362 N-D '62

1. Z Kliniki Położnictwa i Chorob Kobiecych Instytutu Matki i
Dziecka w Warszawie (Kierownik: prof. dr. med. J. Lesinski).

TELKO, Miroslaw; PRONIEWSKI, Jerzy; KARASEK, Janina

Behavior of oxytocic substances in the blood of pregnant women following the administration of hormones and pharmacological preparations. Ginek. pol. 34 no.4:433-439 '63.

1. Z Kliniki Poloznictwa i Chorob Kobietych Kierownik: prof. dr med. J. Lesinski i z Instytutu Matki i Dziecka w Warszawie
Dyrektor: prof. dr med. B. Gornicki.

(BLOOD CHEMICAL ANALYSIS) (OXYTOCICS)
(ESTROGENS) (PROGESTERONE)
(GONADOTROPINS, CHORIONIC)

PrONIEWICZ, Zbigniew, mgr.

Employee vacations in People's Poland. Fraca zabezp spoi 3
no.11:19-25 '61.

PRONIEWSKA, Wanda

Urinary protein content after the administration of some diuretics. Pol. tyg. lek. 20 no.27:1010-1013 5 J1 '65.

1. Z II Kliniki Chorob Wewnętrznych AM w Białymstoku
(Kierownik: prof. dr. Jakub Chlebowski).

S/035/59/000/003/009/039
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1959, No. 3,
p. 32, # 1908

AUTHOR: Pronik, I. I.

TITLE: Spectral Classes, ¹²Stellar Magnitudes and Color Indices of 3915 Weak
Stars in a Region with the Center at $18^h10^m - 15^{\circ}00'$ (1950)

PERIODICAL: Izv. Krymsk. astrofiz. observ., 1958, Vol. 20, pp. 208-298
(English summary)

TEXT: G. A. Shayn initiated investigation in the Krymskaya astrofiziches-
kaya observatoriya (Crimean Astrophysical Observatory) of classification of
spectra, determination of stellar magnitudes and color indices for weak stars up
to $12^m.2$ obtained with low dispersion. The purpose of this investigation was
studying the star and dust components of the Galaxy and the detection of
excitation stars of galactic nebulae. The present catalogue is a part of this
study; it incorporates the celestial region from 17^h56^m to 18^h30^m in α and
from $-10^{\circ}30'$ to $-19^{\circ}00'$ in δ (1950). The following data are given: right

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S/035/59/000/003/009/039
A001/A001

Spectral Classes, Stellar Magnitudes and Color Indices of 3915 Weak Stars in a
Region with the Center at $18^h 10^m - 15^{\circ} 00'$ (1950)

ascension and declination for 1950, spectral class (Sp), magnitudes of stars m_{pg} ✓
in the stellar magnitude system very close to the international photographic;
color indices $C = m_{pg} - m_{pr}$ (m_{pr} in the system of stellar magnitudes close to the
photoreduced one); numbers of stars according to the catalogue ED or HD (the sign
of minus before the number of the zone in ED is omitted). Some values of
stellar magnitudes and color indices are given with an accuracy up to one tenth
of stellar magnitude. There are 26 references.

From author's summary

Translator's note: This is the full translation of the original Russian
abstract.

Card 2/2

83438

3/035/60/000/007/005/018
A001/A001

3.1430

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 7,
p. 46, # 6222

AUTHOR: Pronik, I.I.

TITLE: A Survey of Stars in the Region of the Milky Way With the Center
at $l = 343^\circ$ and $b = 0^\circ$

PERIODICAL: Izv. Krymsk. astrofiz. observ., 1959, Vol. 21, pp. 268-275 (English
summary)

TEXT: The systems of photographic stellar magnitudes and color indices, obtained earlier by the author (RZhAstr., 1959, No. 3, p. 1908) were investigated. Corrections to the previous system of values were found, the errors of which were due to the absence of bright stars ($m \approx 9.5$) in the area SA 134 which was used as a standard. There is a cloud of dark matter in the region investigated, extending from 90 to 150 parsecs and having an absorbing capacity of 1.4^m . Starting from 250 parsecs, a smooth increase of absorption is revealed up to a distance of 1,300 parsecs, amounting to 1.6^m . The stars observed closely approach the inner

Card 1/2

83438

S/035/60/000/007/005/018

A001/A001

A Survey of Stars in the Region of the Milky Way With the Center at $l = 343^{\circ}$ and
 $b = 0^{\circ}$

spiral arm. A preliminary comparison of the data of the catalogue obtained with
the catalogues of the other Milky Way regions shows an excess of stars of the
spectral class A in the region investigated, amounting to approximately 15%.
There are 23 references. ✓

A.S. Sharov

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

S/035/62/000/001/003/038
A001/A101

AUTHOR: Pronik, I. I.

TITLE: Study of interstellar light absorption in the region centered on
 $l = 343^{\circ}$, $b = 0^{\circ}$

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 1, 1962, 28,
abstract 1A265 ("Izv. Krymsk. astrofiz. observ.", 1960, v. 22,
152-165, English summary)

TEXT: The structure of interstellar absorbing medium over 8×8.5 sky
area has been studied. The catalog of spectral classes and color excesses of
stars in direction at $l = 343^{\circ}$ and $b = 0^{\circ}$, published earlier (cf. RZhAstr,
1959, no. 3, 1908) served as an observational basis of the study. There were
discovered: a near dense cloud, absorbing over 1^m over a distance of 40 pc,
and far separate condensations of interstellar medium. The near cloud has
condensations and thin-out regions ranged from one to several parsecs. Far
condensations, ranged from 40 to 1,000 pc, absorb up to 2.5^m per each 100 pc.
Graphs are presented showing relations between absorption and distance module
for individual sections into which the studied part of the sky was divided.

Card 1/2

Study of interstellar light absorption ...

S/035/62/000/001/003/038
A001/A101

A chart of distribution of absorbing matter, in projection onto the galactic plane, is presented. A conclusion has been drawn that the region studied is located along the arm or a branch of the galactic arm. There are 26 references.

Ye. Kharadze ✓

[Abstracter's note: Complete translation]

Card 2/2

23702

S/035/61/000/004/033/058
A001/A101

3,1560

AUTHOR: Pronik, I.I.

TITLE: A study of spatial distribution of stars of different spectral classes in a region with the center at $l = 343^\circ$, $b = 0^\circ$ ($\alpha = 18^h 10^m$, $\delta = -15^\circ$)

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 4, 1961, 47, abstract 4A407 ("Izv. Krymsk. astrofiz. observ.", 1960, v. 23, 46-59, Engl. summary)

TEXT: Using the catalogue of the author (RZhAstr, 1959, no. 3, 1907) including stars up to $11^m.5 - 21^m.0$ in the $8^\circ 0' \times 8^\circ 5'$ region with the center at $l = 343^\circ$, $b = 0^\circ$, the visible distribution of 276 stars of spectral classes O - B3 up to $11^m.5$ was investigated. All of them are concentrated to a belt $\pm 2^\circ 2'$ about the galactic equator and reveal a trend to concentrate in regions of stellar clusters and gaseous nebulae. A table is presented listing 17 diffuse nebulae and most probable stars exciting emission of the nebulae. The spatial distribution of stars is considered using estimates of their distances. Regions with enhanced and reduced content of stars O - B3 are outlined. A statistical investigation of 3,039 catalogue stars of spectral classes B5 - M up to $11^m.5$ was performed. These stars are

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23702

S/035/61/000/004/033/058
A001/A101

A study of spatial distribution ...

distributed uniformly throughout the region. The author presents the percentage of giants (III) and supergiants (I and II) among the stars of different spectral classes, as well as distribution of stars of different classes by distance moduli. On the basis of the latter, stellar density of different spectral subclasses at different distances from the Sun (up to 1,100 parsec for stars B5) was calculated. Open clusters present in this region are considered. Arguments are adduced in favor of reality of the cluster NGC 6618. Distances to the clusters NGC 6613 and NGC 6596 are estimated to be 500 and 700 parsec respectively. The author draws the following conclusions: 1) in the region studied the line of sight extends at least up to 3,000 parsec along a spiral arm; 2) there is a large complex in the arm investigated, which consists of nebulae and young star clusters within which the density of neutral hydrogen has an enhanced value; 3) there is a gap of approximately 600 parsec between the Orion arm and Sagittarius arm where there are no O - B5 stars, very few B8 - dF5 stars, and clusters and nebulae are also absent. This gap is filled up with giants of late spectral classes and dark matter. There are 30 references.

T.Agekyan

[Abstracter's note: Complete translation]

Card 2/2

PRONIK, I.I.

O-B stars in the region $\alpha = 18^{\text{h}} 54^{\text{m}}, \delta = +5.0^{\circ}$. Astron. tsir.
no. 214:17 S '60. (MIRA 14:1)

1. Krymskaya astrofizicheskaya observatoriya.
(Stars—Observations)

PRONIK, I.I.

Photographic magnitudes and color indices of 79 early O-B2 stars
in an area with the center at $\alpha = 18^h 54^m$; $\delta = +5^\circ, 0$. Izv. Krym.
astrofiz. obser. 25:37-45 '61. (MIRA 14:10)
(Stars...Observation)

PRONIK, I.I.

Luminosity function in the region of the Milky Way with the center $l = 343^\circ$, $b = 0^\circ$. Astron.zhur. 38 no.4:662-664 J1-Ag '61. (MIRA 14:8)

1. Krymskaya astrofizicheskaya observatoriya AN SSSR.
(Milky Way)

PRONIK, I.I.

Structure of the arm in Orion. Astron.zhur. 39 no.2:362-363
Astron.zhur. 39 no.2:362-363 Mr-Ap '62. (MIRA 15:3)

1. Krymskaya astrofizicheskaya observatoriya AN SSSR.
(Nebulae)

FRONIK, I. I.; PRONIK, V. I.

Distribution of early stars in the Galaxy. Astron. zhur. 40
no.1:94-99 J-F '63. (MIRA 16:1)

(Stars—Distribution)

BOYARCHUK, A.A.; PRONIK, I.I.

Spectrophotometric study of Be stars with very thick envelopes.
Izv. Krym. astrofiz. obser. 29:268-277 '63. (MIRA 16:10)

L 8616-65 EWT(1)/EWG(t)/EEC(t) Pe-5/Pae-2 AFWL/AFETR/SSD/ESD(t) GW

ACCESSION NR: AR4038677

8/0289/64/000/005/0056/0056

SOURCE: Ref. zh. Astron. Otd. vyep., Abs. 5.51.306

AUTHOR: Prosk, I. I.

TITLE: The problem of the relationship between the density of gas and dust in the direction of the diffuse nebula NGC 6618.

CITED SOURCE: Izv. Krymsk. astrofiz. observ., v. 30, 1965, 118-125

TOPIC TAGS: nebula, astronomy, stellar spectral class, stellar astronomy, interstellar space, neutral hydrogen, nebular dust cloud

TRANSLATION: As a result of a review of the spectra of stars responsible for the luminescence of the nebula NGC 6618 it has been found that the distance to the nebula is 3300 parsecs, which agrees with radioastronomical observations. Newly determined spectral classes of certain stars, together with certain other data, are cited in a table. After comparing optical data for dust clouds with radioastronomical data for clouds of neutral hydrogen the author concludes that in the direction of the nebula NGC 6618 the density of gas and dust is high.

150:1. Bibliography of 22 titles. B. Fesenko.

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L 8616-65

ACCESSION NR: AR4038677

DATE ACQ: 17Apr64

SUB CODE: AA

ENCL: 00

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BOYARCHUK, A.A.; PRONIK, I.I.

Study of the H line profile in Be star spectra. Izv. Krym. astrofiz.
obs. 31:3-11^{*} '64. (MIRA 17:9)

L 10781-65 EMT(1)/ENG(v)/EEC(t) Pe-5/Pae-2 BSD/APWT/SSD/APETR/ESD(t) GW

ACCESSION NR: AP4047161

S/0033/64/041/005/0963/0967

AUTHOR: Pronik, I. I.

TITLE: Possible causes of the variation in the interstellar reddening law ^B

SOURCE: Astronomicheskij zhurnal, v. 41, no. 5, 1964, 963-967

TOPIC TAGS: Interstellar reddening, astrophysics, interstellar dust, interstellar dust cloud, Milky Way, interstellar magnetic field

ABSTRACT: Many observations have shown that the law of interstellar reddening of light is different in the directions of the constellations Cygnus and Cassiopeia-Perseus. A number of explanations have been advanced, but the only acceptable one

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ACCESSION NR: AP4047161

2

law in the direction of Sagittarius-Scutum ($\sim 22^\circ$) is the same as towards Cassiopeia-Perseus, where the line of sight is across the direction of the magnetic field. However, polarization measurements show that the percentage of polarized light in the direction $\sim 22^\circ$ is small and the distribution of the directions of the electric vector of the polarized light is chaotic, like in Cygnus. It has been shown that the magnetic field in this direction is parallel to the line of sight both at relatively close distances (500 parsecs from the sun) and at great distances (over 1000 parsecs). Fig. 1 of the Enclosure shows all three directions plotted on the galactic plane. Consideration of all the facts presented in the paper leads the author to postulate that more than one factor is responsible for the variation in the reddening law. In addition to the orientation of particles in the interstellar magnetic field, it is necessary to take into account possible changes in the mean size of particles from place to place in interstellar space.

L 10781-65

ACCESSION NR: AP4047161

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Gershberg and Yu. S. Fil'mov for discussion of the paper and G. N. Sharapova for assistance in computations". Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: Krymskaya astrofizicheskaya observatoriya, AN SSSR (Crimean Astrophysical Observatory, AN SSSR)

SUBMITTED: 03Feb64

ENCL: 02

SUB CODE: AA

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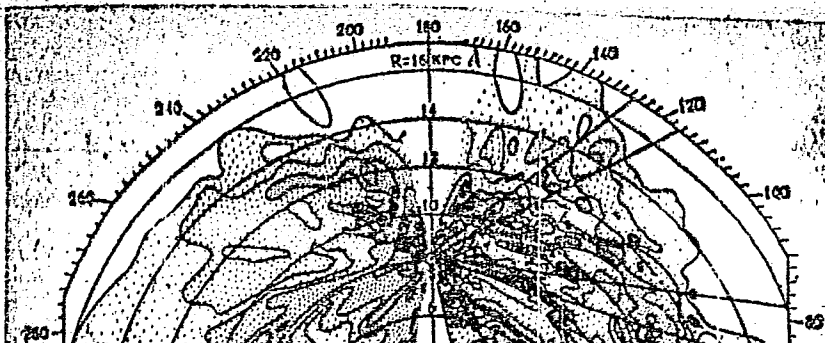
OTHER: 013

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L 10781-65
ACCESSION NR: AP4047161

Figure 1.

ENCLOSURE: 01



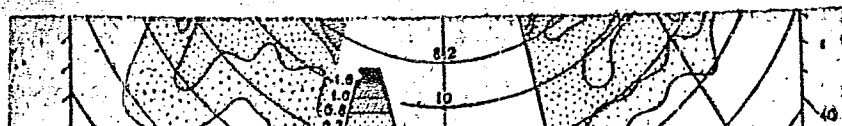
CARD 4/2

L 10781-65

ACCESSION NR: AP4047161

Continuation of Figure 1.

ENCLOSURE :02



Spiral arms of the Galaxy as indicated by observations of neutral hydrogen at 21 cm. The three mentioned directions are indicated. A) kiloparsecs

Card 5/5

PRONIK, I.I.

Dust distribution in the galactic plane in the vicinity of the sun
(theses of a report). Trudy Astrofiz. inst. AN Kazakh. SSR 5:274-
276 '65. (MIRA 18:6)

PRONIK, I.I.

Possible deviations from circular motion of hydrogen atoms located
in the outer spiral arms of the galaxy. Astron. zhur. No. 5:923-
928 S-O '65. (MIRA 18:10)

1. Krymskaya astrofizicheskaya observatoriya AN SSSR.

L 22924-66 EWT(1) GW

ACC NR: AP6012737

SOURCE CODE: UR/0033/66/043/002/0291/0299

AUTHOR: Pronik, I. I.

ORG: Crimean Astrophysical Observatory Academy of Sciences USSR (Krymskaya Astrofizicheskaya observatoriya, AN SSSR)

TITLE: The magnetic field of the Galaxy in the vicinity of the sun

SOURCE: Astronomicheskiy zhurnal, v. 43, no. 2, 1966, 291-299

TOPIC TAGS: galactic magnetic field, light polarization, interstellar calcium, galactic latitude, galactic longitude

ABSTRACT: Geometric investigations of the galactic magnetic field in the vicinity of the sun using light polarization data showed that the local magnetic field can be considered as a regular one. The vector of the magnetic field coincided with the sight line in two directions in the galactic plane, but the plane of the field was not parallel to the galactic plane. An analysis of the polarization of starlight and the motion of clouds of interstellar calcium showed that no regular distribution of predominant angles of the electric vector exists in galactic latitudes greater than 4° . At the galactic longitude of 140° the magnetic field is perpendicular to the sight line. At 15° longitude the magnetic field is directed along the sight line beneath the galactic plane, and at 75° longitude it is above the galactic plane. In inner regions of the Galaxy dust particles are associated with fields having dif-

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UDC: 523.854.22

L 22924-66

ACC NR: AP6012737

ferent directions. The magnetic field of the fundamental mass of dust matter is considered to be the basic field. The basic field in longitudes near the galactic center is inclined to the galactic plane at an angle of 40° — 60° , as determined from the polarization angle of starlight. A surface associated with the basic field is curved. The pole of the basic field is located in an outer region of the Milky Way and the pole of the second field is in an inner region. Hydrogen clouds having great velocities can be observed only outside the galactic plane. Analysis of a photograph of the Milky Way shows the concentration of dark nebulae in the vicinity of the sun. The inclination angle of nebulae to the galactic plane increases with the galactic latitude. The elongated shape of dark nebulae agrees with the existence of two interstellar magnetic fields located within the Milky Way. Magnetic fields in the solar vicinity intersect each other at a 60° angle. The author expresses thanks to S. A. Kaplan and N. M. Shakhovskoy for discussions and G. N. Sharapova, A. I. Bruns, and Ye. I. Ios'ko for photographs and sketches. Orig. art. has: 7 figures. [EG]

SUB CODE: 03/ SUBM DATE: 06Nov65/ ORIG REF: 005/ OTH REF: 011/ ATD PRESS: 4237

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2/2 La

PRONIK, V.I.

USSR/Astronomy - Interstellar Gases 1 Apr 53

"Problem of the Turbulent Character of Motion of
Interstellar Gaseous Clouds," S.A. Kaplan and
V.I. Pronik, L'vov State U imeni Franko

Z DAN SSSR, Vol 89, No 4, pp 643-646

To confirm that motion of interstellar gaseous clouds is of a turbulent nature, the authors investigate radial velocities, using catalogue of W.S. Adams (Ap.J. 109 (1949)). Conclude that motion of interstellar gaseous clouds obeys, in the first approximation, laws of isotropic and local turbulence. Presented by Acad G.A. Shajn 6 Feb 53.

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22087

S/O35/61/000/003/014/548
A001/A101

3.1560

AUTHORS: Gershberg, R.Ye. and Pronik, V.I.

TITLE: The absolute spectrophotometry of the nebula NGC 7000 by means of light filters

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 3, 1961, 29, abstract 3A282 ("Izv. Krymsk. astrofiz. observ.", 1959, v. 21, 215-228; Engl. summary)

TEXT: The authors describe the methods of photographic observations of diffuse emission nebulae and present the results of investigation of the nebula NGC 7000. They determined absolute intensities of nebula emission in the lines $\lambda 3727$, N_1+N_2 , $H \beta$ and $H \alpha + [N II]$, and in continuous emission near $\lambda 6000$. The singling out of the mentioned regions was performed by means of glass light filters. The contours of pass bands are given. Observations were conducted with a camera $D = 640$ mm, $D/F = 1:1.4$. The calibration of the photographs was made by a tubular photometer. Standardization was carried out by references to off-focus stellar images obtained with an auxiliary camera installed on the device. The energy fluxes from the standard stars were determined from the energy distribution in

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The absolute spectrophotometry ...

spectra of stars of different spectral classes with respect to the Sun. The accuracy of emission intensity determination in absolute magnitudes amounts to $\sim 20\%$. The changes in emission line intensities and continuous spectrum of the nebula were obtained along the selected cross sections and in the bright filaments. It is shown that continuous emission of the nebula is mainly caused by the background of weak stars not resolved by the photoemulsion. Electronic temperature was determined from the ratios $[O II]/H\beta$ and $[O III]/H\beta$. It does not practically change at the transition from the zone of O III to the zone of O II; it also does not increase in bright filaments which are sharp edges of [O III]-emission. The enhanced brightness of continuous emission near the bright filaments can be explained by the mechanism of hydrogen emission. The star HD 199579 (C7) is the star exciting the northern part of the nebula. However, it is not able to ionize the whole set of nebulae in this field. It is presumed that one more exciting star or a group of stars exist between the "Pelican" and "America" in the field of the "Mexican Bay", hidden from observation by a dense dust cloud. It is noted that the exciting star must be located very near the curvature center of a large arc-shaped filament at the nebula eastern edge. From the absence of stars of spectral classes O or B0 up to 12^m in this field, the authors estimate the density and mass of the absorbing cloud. The lower limit of absorption in the cloud is 6^m , and its mass amounts to

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S/O35/61/000/A03/014/145
A001/A101

The absolute spectrophotometry ...

~1,000 $\odot$. It is surmised that the dark cloud is genetically related to the nebula. It is necessary to know distances to the nebula and to the cloud. The photographs of the "America" nebula in various regions of spectrum are presented, as well as photometric cross sections in various rays, and the photograph of the set of nebulae in the field investigated. There are 20 references.

V. Yesipov

[Abstracter's note: Complete translation]

Card 3/3